



## **SCHOTT & ASSOCIATES**

### **Ecologists & Wetlands Specialists**

21018 NE Hwy 99E • P.O. Box 589 • Aurora, OR 97002 • (503) 678-6007 • FAX: (503) 678-6011

#### **WETLAND SUMMARY**

Most of the wetlands on the Hawk Creek site are found within the old golf course. Primarily, they are within the old fairways of the course. The land within the course had been leveled, smoothed and planted to fairway grasses, primarily one of the bent grasses. The grass throughout the old course is nearly a monoculture of non-native bentgrass. In addition, there are a combination of ditches and drain-tiles that have significantly altered the hydrology of the remaining wetlands. Because of the historic use of the wetlands as a golf course the wetlands currently are low quality for most wetland functions.

During the design of the proposed development the wetland biologist worked with both the design team and the applicant and attempted to avoid the wetlands as much as possible, and to minimize the remaining impacts as much as possible, while maintaining an economically feasible project.

Access to the south side of the site was determined by existing roads, topography, and land ownership. The need to enter the site in a specific location resulted in much of the proposed wetland impacts. Again, this wetland impact is in a low quality wetland. The path that would connect with the northern portion of the site was selected because of the creek crossing. This location minimized riparian impacts. The wetland impacts due to lots 4, 5, 6, 9, and 10 are for the most part on isolated wetlands, which would have been surrounded by development, and indirect impacts were anticipated. Development of the adjacent areas would have removed much of the hydrology, and there was a distinct possibility that the wetlands would have lost much of their hydrology source. In addition, they would have been surrounded by development, which would have significantly reduced their functions.

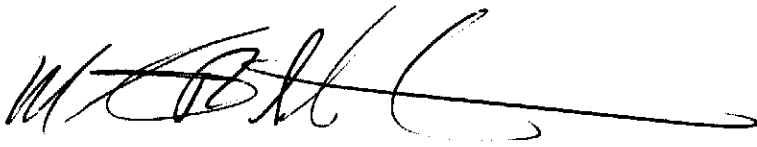
The proposed wetland mitigation would mitigate for 47,923 sq feet of wetland impacts, by restoring 22,906 sq feet of historical wetland that was filled to create one of the golf greens and cart path, as well as a small area dewater by a ditch. DSL's mitigation ratio for wetland restoration is 1 : 1. In addition, 37,525 sq ft of wetland will be created. The creation areas are adjacent to other wetlands, and near the creek. DSL's wetland mitigation ratio for wetland creation is 1.5 : 1. The advantage of creating wetlands adjacent to other wetlands is that there is an existing source of water. In addition, the mitigation areas are within the flood plain of the creek, and will provide additional water storage, which will help reduce flooding. The proposed mitigation exceeds DSL's mitigation requirements by 215 sq ft.

Currently, there is a drain-tile and ditch system that was constructed to help keep the golf course dry. This system significantly changed the hydrology of the wetland. The wetland is significantly drier than historically. In addition, the drainage system carried water to the road ditch significantly faster than the historical condition. The historical wetland retained and detained much of the water. The intent is to restore the original hydrology of the wetland by filling the ditch that runs along the southwest property line. Additionally it is being proposed to have the storm water from the development, after it has run through a water quality

facility, discharged to the upper portion of the wetland. The result will be the wetland will become wetter, and the storm water will take longer to reach the culvert under the highway. This should help reduce flooding. DSL and the Army Corps of Engineers requires mitigation to replace the impacted wetland's functions. The proposed mitigation will either meet or exceed these requirements. There will be significant increase in the storm water storage. Furthermore, the mitigation plantings will improve the wildlife habitat. Plantings along the creek will help the stream bank stability, and reduce erosion. Establishing trees and shrubs along the creek will also improve fish habitat by providing shading as well as stabilizing the stream banks. A complete functional analysis will be submitted to DSL and the COE when wetland fill permits are applied for.

The wetland dredge and fill permit process is similar for both DSL and the COE. Once a permit application is submitted to DSL it reviews the application for up to 30 days to determine if the application is complete. Once an application is determined to be complete it is sent to the various jurisdictions and state agencies and neighboring property owners, and other concerned citizens for review and comment. The review period is for 30 days. Once the comments have been received they are sent to the applicant to respond. The applicant has 15 days to respond. Once the response has been received by DSL the agency has 45 days to either permit or deny the application. The COE has a similar process, but they do not have definitive time lines. The local jurisdiction has to review the application and check a box stating if the proposed development is consistent with its codes.

The permitting process between the local jurisdictions and DSL and the COE often results in significant changes having to be made to a proposed development. It has been referred to as permitting by successive approximation. Typically, most developers go through the local jurisdictions process before going through the wetland fill process. This is done because generally the consultant has a good idea of what DSL and the COE will permit. Thus, reducing the number of times an application has to be revised to satisfy both the local permitting and the wetland fill permitting.

A handwritten signature in black ink, appearing to read 'M. Schott', with a long horizontal flourish extending to the right.

Martin R. Schott, Ph.D.